



CITY OF DURHAM | NORTH CAROLINA

Date: May 2, 2014

To: Thomas J. Bonfield, City Manager
Through: W. Bowman Ferguson, Deputy City Manager
From: Donald F. Greeley, Director, Water Management
Subject: Water Treatment Plant Residuals
Engineering Services Contract - Amendment No. 1

Executive Summary

On January 17, 2012, City Council awarded a professional engineering consulting services contract to CDM Smith Inc. (formerly Camp, Dresser McKee, Inc.) for the Water Treatment Plant Residuals Master Plan and Design Project at the Brown and Williams Water Treatment Plants (WTPs). The initial scope of services included developing a master plan for handling and treatment of backwash process water and long term residuals management. The original contract anticipated two amendments - one for design, permitting and award and a second for construction administration and inspections services.

The Master Planning phase of the project has been completed and the project is now ready to move into the Design/Bidding Phase. This proposed Amendment No. 1 is for design, permitting and bidding services needed to implement the recommendations from the Water Treatment Plant Residuals Master Plan and Preliminary Engineering Report. Prior to the start of construction, staff anticipates bringing forward a second amendment to this contract for CDM Smith, Inc. to perform construction related services (construction administration and inspection).

Recommendation

The Department of Water Management recommends that the City Council:

1. Authorize the City Manager to execute a Contract Amendment with CDM Smith Inc. for engineering services for the Water Treatment Plant Residuals Master Plan and Design Project for a total amount not to exceed \$2,655,700.00; and
2. Authorize a contingency amount of \$264,300.00; and
3. Authorize the City Manager to negotiate change orders for the contract provided that the total project cost does not exceed \$3,466,100.00.

Background

The City's two water treatment plants – the Brown and Williams WTPs - currently provide drinking water to customers throughout the service area. Through the conventional water treatment process at each facility, solids are first settled and further removed from water through the filtration stage. These solids, also referred to as residuals, must be dewatered and disposed of in accordance with applicable state and federal regulations.

Currently, the residuals are dewatered through a temporary processing unit operated by an outside contractor and ultimately disposed at a landfill in the region. This method of treatment and disposal needs to be significantly upgraded and expanded for the City to be in compliance with current residuals handling standards. The NC Public Water Supply Section (NCPWSS) of DENR has allowed the City some leniency in designing and constructing the final facilities as they are aware of the master planning efforts at the two treatment plants and recognized the efficiency for the City to complete the Master Plan prior to designing the Residuals facility.

The engineering firm of Camp, Dresser and McKee (CDM) was selected for Professional Engineering Services for the master planning, design, permitting and construction administration of upgrades to the residuals handling processes at the Brown and Williams Water Treatment Plants. There will be 3 phases of the engineering services for this project:

1. Master Planning	\$ 496,100	Complete
2. Design/Bidding	\$2,655,700	Amendment #1
3. Construction Services	\$3,000,000*	Amendment #2
Total Projected Cost	\$7,151,800*	

* Estimated

The estimated construction cost for this project is \$30,000,000-\$35,000,000.

Issues/Analysis

As part of the master planning and preliminary engineering phase, a Residuals Management Plan and Preliminary Engineering Report/Conceptual Design were prepared with recommendations on the selection and sizing of residuals handling facilities. This information was used to prepare the design, permitting and bidding amendment to this contract with CDM.

Amendment No. 1 will provide the following:

- Design services for residual handling improvements at the Brown and Williams WTPs;
- Permit preparation and submittal to City, State and Federal Agencies as required;
- Bidding services for the residual handling project.

The negotiated fees for the proposed Amendment No. 1 elements (design, permitting and bidding services) are summarized below, along with the original contract amounts.

Item	Total
Original Contract Amount – Base	\$ 496,100
Original Contract Contingency	\$ 50,000
Amendment No. 1 Elements:	
Design Implementation	\$ 96,500
Final Design	\$ 2,425,900
Permit Applications	\$ 76,500
Bidding and Award	\$ 56,800
Subtotal Amendment No. 1 - Base	\$ 2,655,700
Amendment No. 1 Contingency	\$ 264,300
Total Amended Contract Amount Plus Contingency	\$ 3,466,100

Alternatives

One alternate is to continue the current residuals handling methodology utilizing contractor operations of the temporary unit and offsite residuals disposals. This would not bring the residuals program up to the current standards outlined by NCPWWS and the City would risk citations by DENR for failure to move the project forward. It is also likely that significant cost savings will be realized by evaluating and upgrading the residuals handling facilities at both water treatment plants. As water treatment capacity increases at Brown Water Treatment Plant, additional residuals will be generated and the handling of these residuals would likely have to be handled at an increased cost due to logistical issues.

A second alternate is to conduct the residuals management design in-house with current engineering and operations staff. Current staff lacks the availability and capability to prepare the detailed design drawings necessary to bid a project of this magnitude.

Financial Impacts

Funding for this amendment is available in the Water Treatment Plant Residuals Master Plan and Design Project which is part of the City's Capital Improvement Program. The funds are currently available in the project accounts:

Capital Project	Account Code	Amount
Water Treatment Plant Residuals and Design Project	4100P762-732203-P0B11	\$2,655,700.00
Water Treatment Plant Residuals and Design Project	4100P762-731900-P0B11	\$264,300.00

SDBE SUMMARY

This is a contract amendment. CDM Smith will be using the following SDBE firm for the additional scope of services:

Firm	ID	City/State	Amount	% of Contract
CH Engineering, PLLC	WSDBE	Raleigh, NC	\$ 41,479.00	1.5%